

Substitute Specification

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION FOR LETTERS PATENT

**INFANT WEARING APPAREL WITH A
DETACHABLE FASTENER**

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TECHNICAL FIELD

[0001] The present disclosure generally relates to diapers, swimwear and clothing for infants and children.

BACKGROUND

[0002] The use of hook and loop fasteners, typically known by the trademark VELCRO®, is widespread. However, application of hook and loop fasteners for use in the area of infant's reusable diapers and swim wear has been less than successful. There are a number of reasons for this problem. First, during the laundering process, the hook portion of the fastener typically adheres to other items in the washing machine. This can cause damage to many items in a short period of time. Additionally, during the drying process, lint and foreign material can adhere to the hook portion of the fastener, reducing its effectiveness. More importantly, in many applications, use of such fasteners results in irritation to the skin of the infant.

[0003] Accordingly, there is a need for a new structure using hook and loop fasteners that is adapted for use with infant's reusable clothing, diapers and swim wear.

SUMMARY

[0004] The present invention is directed to an apparatus that satisfies the above needs. Novel infant wearing apparel is disclosed that includes a detachable fastener. The fastener includes fabric extensions that may be used to adjust the size of the diaper, while preventing irritation to the skin and improving the laundering process.

[0005] The infant wearing apparel with detachable hook and loop fasteners of the present invention provides some or all of the following structures.

[0006] (A) A body made of sheet material includes a front portion, a back portion and defines leg notches.

[0007] (B) Left and right loop fasteners are attached to left and right inside upper corner surfaces of the back portion.

[0008] (C) A front loop fastener strip is attached to the outer upper edge of the front portion of the body made of sheet material.

[0009] (D) Left and right fastener extensions connect left and right ends of the front loop fastener strip to the left and right loop fasteners, respectively. Each fastener extension has hook fasteners on a first side at a first end and on a second side at a second end. Smooth surfaces are on sides opposite the hook fasteners.

[0010] (E) Optionally, each fastener extension includes an auxiliary fastener, attached to a middle portion of the fastener extension. Each auxiliary fastener includes a first surface having hook fasteners and a smooth second surface. The hook portion engages left and right outside rear fastening patches. Accordingly, the connection between the left and right corners of the upper rear edge and the left and right sides of the front fastening strip is more secure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] These and other features, aspects, and advantages of the present invention will become better understood with regard to the following description, appended claims, and accompanying drawings where:

[0012] FIG. 1 shows a perspective view of an implementation of the infant wearing apparel with detachable hook and loop fasteners.

[0013] FIG. 2 shows a planar view of the outside surface of the apparel of FIG. 1.

[0014] FIG. 3 shows a planar view of the inside surface of the apparel of FIG. 1.

[0015] FIGS. 4A, 4B and 4C show front, side and back views of an exemplary fastener extension.

[0016] FIG. 5 is a view similar to that of FIG. 2, showing a second version of the infant wearing apparel.

[0017] FIG. 6 shows a side view of a second version of the fastener extension associated with the version of FIG. 5.

DETAILED DESCRIPTION

[0018] An infant wearing apparel 10 is usable as a swimsuit, training pants, reusable diaper or article of clothing for any purpose. A preferred version of the infant apparel includes a body made of sheet material 20 having an absorbent inside surface and a waterproof outside surface. Hook and loop type fasteners are used to secure the garment. Left and right loop fasteners 40, 42 are attached to an inside upper surface of the rear of the body made of sheet material. A front loop fastener strip 60 is attached to an outside upper surface of the front of the body made of sheet material 20. Left and right fabric extensions 80, 82 include hook connectors on first and second sides and connect the left and right loop fasteners 40, 42 to the left and right ends of the front loop fastener strip 60, respectively.

[0019] Optionally, the left and right loop fasteners 40, 42 of the inside upper surface of the rear of the body 20 may be supplemented with the addition of left and right outside loop fasteners 110, 112 (see Fig. 5) located on the outside upper surface of the rear of the body made of sheet material. Thus, the left and right upper rear corners may have both left and right inside loop fasteners 40, 42, as well as left and right outside loop fasteners 110, 112. To fasten the garment of Fig. 5, the somewhat more complex fabric extension seen in Fig. 6 is utilized. The fastener of Fig. 6 includes the structure of the more simplistic fastener of Figs. 4A—C, but with the addition of an auxiliary fastener 100, which extends from a middle portion 106 of the fabric extension 80. As is the case with the fastener of Figs. 4A—4C, one fastener as seen in Fig. 6 can be used to attach each of the left and right sides of the garment. For example, the hook VELCRO 92 is used to fasten to the left side 62 of the front fastener strip 60. The hook VELCRO 102 is used to fasten to the left outside loop fastener 110. The hook VELCRO 88 is used

to fasten to the inside left loop fastener 40. Because the inside loop fastener 40 and the outside loop fastener 110 are both grasped by the hook fasteners 88, 102, the fastener of Fig. 6 is able to securely grasp the upper portion of the back of one side of the garment.

[0020] Referring to FIGS. 1, 2 and 3, a body made of sheet material 20 includes a front portion 22, a back portion 24, and leg notches 26. The leg notches may have an elastic element to provide a secure fit around the infant's legs. An inside surface 28 is typically made of absorbent material. An extra absorbent layer 30 may be added, as needed. An outside surface 32 is typically made of plastic or other waterproof material. An upper front edge 34 and an upper rear edge 36 are oriented upwardly during wear.

[0021] Referring to FIG. 3, left and right loop fasteners 40, 42 are attached to the inside surface of the upper left and right corners of the upper rear edge 36 of the back portion 24 (Fig. 1) of the body made of sheet material 20, respectively. The loop fasteners, unlike hook fasteners, are soft. Therefore, if and when they come into contact with a baby's skin, they are not going to be a cause of irritation. A preferred loop fastener is the soft portion of a VELCRO® fastener, although similar fasteners may be substituted.

[0022] Referring to FIGS. 1 and 2, a front loop fastener strip 60 is attached to the front portion 22 of the body 20 made of sheet material adjacent to the outer upper edge 34. A preferred version of the loop fastener is also made of the soft portion of a VELCRO fastener, although similar fasteners could be substituted. As will be seen, a left end 62 of the fastener strip is releasably attachable to a left fastener extension 80, while a right end 64 is releaseably attachable to a right fastener extension 82.

[0023] Referring to FIGS. 1—3 and 4A—4C, left and right fastener extensions 80, 82 connect left and right ends 62, 64 of the front loop fastener strip 60 to the left and right loop fasteners, 40, 42, respectively, which are located on the inside surface of the back 24 of the garment 10. Each fastener extension 80, 82 includes first and second sides 84, 86 (Fig. 4A, 4C). The first side 84 of each fastener extension 80, 82 includes a first hook surface 88 and a first smooth surface 90. The second side 86 of each fastener extension 80, 82 includes a second hook surface 92 and a second smooth surface 94.

[0024] As seen in FIGS. 1—3, in use, the left fastener extension 80 attaches the left loop fastener 40 on the inside upper back of the garment to the left end 62 of the front fastening strip 60. In particular, the first hook surface 88 of is attached to the left loop fastener 40. The second hook surface 92 is attached to the left end 62 of the front loop-fastening strip 60. Similarly, the right fastener extension 82 attaches the right loop fastener 42 on the inside upper back of the garment to the right end 64 of the front fastening strip 60.

[0025] Optionally, the left and right fastener extensions 80, 82 may each include an auxiliary fastener 100. As seen in FIG. 6, the auxiliary fastener 100 is attached to a middle portion 106 of the fastener extension. Each auxiliary fastener 100 includes a first surface 102 having hook fasteners and a second surface 104 that is smooth. The fastening extensions of FIG. 6—having the optional auxiliary fastener 100—are associated with the optional embodiment of the garment, seen in Fig. 5.

[0026] As seen in FIG. 5, an optional embodiment of the garment is associated with the fastener of FIG. 6. The version of FIG. 5 additionally includes left and right outside rear fastening patches 110, 112, which are attached to the

outside surface of the back portion 24 (Fig. 1) of the body made of sheet material 20. Accordingly, the left and right outside rear fastening patches 110, 112 are on the outside surface 32 of the body 20 made of sheet material in the same general location wherein the left and right loop fasteners 40, 42 are positioned on the inside of the body made of sheet material (see Fig. 2 for a view of the inside portion of the body).

[0027] In operation, one fastener according to FIG. 6 is used to attach each of the left and right sides of the garment. In particular, the hook surface 102 of a fastener of FIG. 6 is attached to the outside rear fastener patch 110. Additionally, the hook surface 88 is attached to the inside fastener 40. Attachment of the hook surface 92 to the fastening strip 60 allows for the diameter of the waist of the garment to be adjusted. As a result, the inside loop fasteners 40, 42 and the outside loop fasteners 110, 112 at the rear of the garment are gripped between the hook fasteners 88, 102. Thus, a firm connection is made between the fasteners of FIG. 6 and the left and right ends of the upper rear edge 36 of the body made of sheet material.